

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TOMIO AMANO,
AKIO YAMASHITA,
and HIROYASU TAKAHASHI

Appeal No. 97-1353
Application No. 07/843,704¹

ON BRIEF

Before BARRETT, LEE, and TORCZON, Administrative Patent Judges.

TORCZON, Administrative Patent Judge.

DECISION ON APPEAL

Appellants seek relief under 35 U.S.C. § 134 from the final rejection of claims 1 and 3-20, all of the pending claims. We reverse.

BACKGROUND

The specification discloses a method and system that permits an end user to define a tree data structure. According to the specification end users need the flexibility to define tree structures specific to their data. It would be

¹ Attorney docket no. JA991-502.

impossible to define all possible tree structures in advance.

(Paper No. 1 (Spec.) at 2-3.)

Appellants state that the claims stand or fall together.
(Paper 13 (App. Br.) at 7.) We select claim 15 to represent the claims on appeal. 37 CFR § 1.192(c)(7). Claim 1, the only other independent claim pending, is the system analogue for the method of claim 15. Claim 15 defines the claimed subject matter as follows:

A computerized method for describing and generating in memory a user[-]defined arbitrary data structure corresponding to a tree having nodes, comprising the steps of:

providing a table for receiving data describing each node of a user[-]defined tree structure, said data including user[-]defined attribute data for each said node, said attribute data including node relationships, said table comprising a set of rows and a set of columns with each row corresponding to a single node contained in said user[-]defined tree structure and each column corresponding to an attribute of said nodes;

entering user[-]defined attribute data into said table;

interpreting said table to allocate an area in a² memory for each of said nodes and respectively setting said attribute data of said nodes in said allocated memory areas; and

² Appellants amended claims 1 and 15 to change "said memory" to "a memory". (Paper No. 6 at 3 and 6, entered 20 Sep. 1995.) The purpose of this amendment is not explained. It appears to create an ambiguity since it is not clear how this memory differs from the memory in the preamble.

generating pointer data indicating connections
of said allocated memory areas according to node
relationships indicated in said attribute data.

(Paper No. 8 at 3, entered 1 March 1996, footnote added.)

The examiner rejected (Paper No. 7 at 2) all pending
claims under 35 U.S.C. § 103 as having been obvious in view of

Simonetti 5,295,261 15 March 1994.

Simonetti describes a hybrid tree-relational data
structure. He notes that relational databases and tree data
structures each have advantages that depend on the nature of
the data and of the queries (and other functions) to be
performed on the data. Trees are better for data that is
suited to hierarchical organization. (1:30-4:56.) For ease
of explanation, Simonetti begins by describing his hybrid
database strictly in terms of a relational database 10:

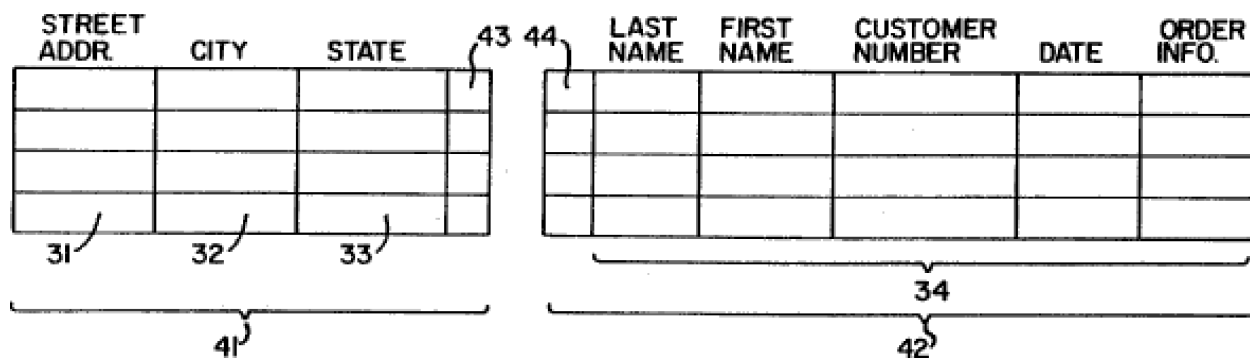
↖ 10

LAST NAME	FIRST NAME	STREET ADDR.	CITY	STATE	CUSTOMER NUMBER	DATE	ORDER INFO.

11 12 13 14 15 16 17 18

Simonetti Figure 1A

He notes that the hierarchical data can be segregated from non-hierarchical data into a separate table 41:

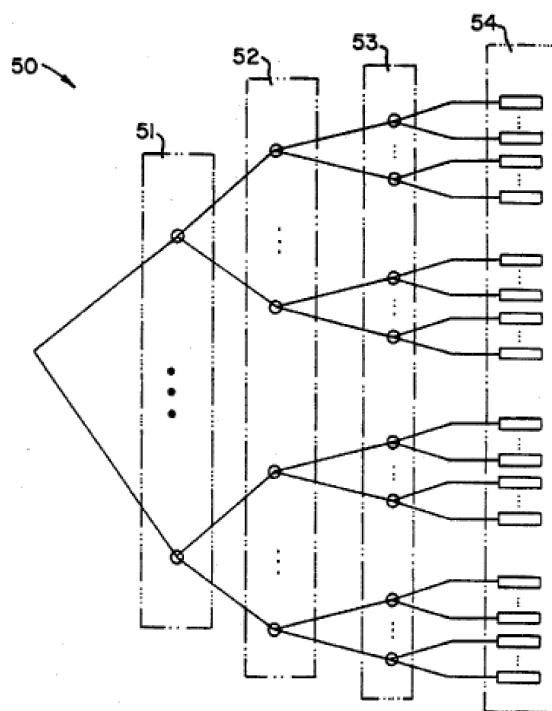


Simonetti Figure 2B

Simonetti converts the hierarchical-data table 41 into a tree structure 50 (right).

(8:12-15.) The tree 50 nodes correspond to table 41 columns.

(8:15-16.) This hybrid structure provides the advantages of a tree structure for hierarchical data, but retains the convenience of a relational database for the non-hierarchical data. Simonetti



Simonetti Figure 2C

does not disclose how or when the table-to-tree conversion occurs.

DISCUSSION

Claim construction is the first step in determining patentability. See Key Pharm. Inc. v. Hercon Labs., 161 F.3d 709, 713, 48 USPQ2d 1911, 1915 (Fed. Cir. 1998) (observing that determining validity first requires claim construction). We begin by construing the claims "to define the scope and meaning of each contested limitation." Gechter v. Davidson, 116 F.3d 1454, 1457, 43 USPQ2d 1030, 1032 (Fed. Cir. 1997). During proceedings before the Office, claims are given their broadest reasonable interpretation consistent with the specification as understood by a person having ordinary skill in the art. In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983).

Appellants specifically contest the meaning of "user" in the claims. According to Appellants, the "user" is an "end user" (cf. Paper No. 1 at 3), not a programmer (see, e.g., Paper No. 13 at 7; Paper No. 1 at 5 (programming is not appropriate for end users)). The examiner does not challenge this distinction between programmer and user. Instead, the examiner relies on portions of Simonetti referring to user data entry to argue that Simonetti meets this element of the claim. (Paper No. 14 at 4-5.) Although we will adopt Appellants' definition of "user" to mean "end user" for the

purposes of this appeal, it is important to note that the "end user" is not really the user of the database, but rather the database designer. Thus, we understand "user" to mean neither the database application programmer nor the database operator (Paper No. 1 at 2), but rather an intermediate user who takes the database application program and customizes it for the operator to use. This definition is not without difficulties, including the fact that the programmer, database designer, and operator may be the same person. We must, however, work from the administrative record that the Appellants and the examiner have created.

Having determined that the user is not the application programmer, but rather the database designer, we must agree with Appellants that Simonetti neither teaches nor suggests that some intermediate user is responsible for converting table **41** into tree **50**. Simonetti does not exclude this possibility, but what was possible is not necessarily what was obvious. In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). Absent some evidence that a person having ordinary skill in the art would have had motivation to leave this conversion step to the database designer, we cannot sustain a conclusion of obviousness.

Although we find no support for a user-defined arbitrary tree structure, we agree with the examiner that Simonetti's hybrid database otherwise teaches or suggests Appellants' tree database. In particular, the distinction between Simonetti's rows and Appellants' rows is based on a failure to compare the two data structures at the same time in their evolution. In Appellants' design stage, the structure of the database is set forth in rows in a table. Simonetti's tables reflect their appearance at the data-entry stage. At the design stage, however, it is now commonplace in user-defined databases such as dBASE, ACCESS, or PARADOX to define the database structure as rows in a design table, which then become columns in the data-entry table. The record contains no evidence of whether this was the case at the time of Appellants' invention. Indeed, the record contains no evidence regarding user-defined databases as of the time of Appellants' invention other than a brief summary in the specification (Paper No. 1 at 3-4).³ We find this fact to be astonishing given Appellants' emphasis on user definition, and related features of user-defined databases, to distinguish their invention from the prior art

³ The record does not contain copies of the summarized references.

of record. In view of Appellants' arguments, such information would appear to be highly material. Cf. 37 CFR § 1.56.

DECISION

The rejection of all pending claims as having been obvious in view of Simonetti alone is

REVERSED

LEE E. BARRETT)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JAMESON LEE)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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RICHARD TORCZON)	
Administrative Patent Judge)	

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